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ABSTRACT

Access to California Community Colleges (CCC) was examined in order to assist the 2005 Task Force of the Chancellor's Consultation Council develop strategies to address the expected economic, cultural, and demographic changes California will undergo between 1997 and 2005. Access to education will become increasingly important to California as technological change will require more residents to obtain a postsecondary education. Education can also help equalize the growing wage inequities in the state. Currently, CCCs are providing California adults their lowest level of access since the late 1960s, even though the state still ranks among the community college access leaders across the United States. Moreover, the mission of the CCCs could expand to include economic development (particularly job training for former welfare recipients), increased English as a Second Language instruction, and the assumption of remedial instruction responsibilities from the California State Universities and the University of California. To meet California's educational and social needs, service rates must increase by 2005, adding at least 238,000 more students to the 1,860,000 expected in 1997. Contains 25 references and 18 charts. (YKH)

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Access to the California Community Colleges

A Technical Paper for the 2005 Task Force of the Chancellor's Consultation Council

November 1997

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Vice Chancellor for
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Prepared by:
Chuck McIntyre
Director of Research and Analysis

with the assistance of:
Chuen-Rong Chan
Channing Yong
Mary El-Bdour
Staff of Research and Analysis Unit

Judy E. Walters, Vice Chancellor
Policy Analysis and Management Information Services Division
Chancellor's Office, California Community Colleges
Sacramento, California

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Summary

Access is one of four technical papers prepared for the use of the 2005 Task Force of the Chancellor's Consultation Council. This task force was formed in Spring 1997 and asked to help the Board of Governors and Chancellor develop strategies to address the challenges of the future facing the California Community Colleges. The other technical papers in this series: *Trends of Importance to Community Colleges, Funding Patterns, and Future Scenarios.*

Access begins by describing why the concept is important to California Community Colleges (CCC), and is followed by a proposed definition and measures, discussion of the California Community Colleges history of access over the past three decades, how they compare to community colleges in other states, and finishes by exploring what level of access Californians should expect from their community colleges in light of what the future may hold, given the expected economic, cultural, and demographic changes the state will undergo between now and the year 2005.

While access is a crucial concept for the conduct of American community colleges, it is difficult to define and we propose a simple beginning approach:

- *headcount enrollment divided by 1,000 adult population*

It is evident that by any reasonable measure, California Community Colleges are currently providing California adults their lowest level of access since the late 1960s, even though the state still ranks among the access leaders in community college education across the country. California's access needs, however, are not defined by other states, but rather, by the California Community Colleges mission, and by the social and job skills required by Californians.

California Community Colleges access or its service level to California adults (defined by enrollment divided by 1,000 adults) is expected to increase from the current level of 59/1000 to 66/1000 by 2005 largely because of the growth in 18 to 24 year-olds seeking transfer and occupational programs and because of improved funding throughout the rest of the 1990s. If (1) technological change will require more Californians to obtain a postsecondary education, (2) there needs to be a reduction in historic wage inequalities, and (3) the prominent role of California Community Colleges in helping meet both these and other key social needs continues, then it follows that CCC access or service rates should increase beyond the expected level of 68/1000 to at least 76/1000 by 2005. This increased service level would add at least 238,000 more students to the 1,860,000 already expected that year.

And if the CCC mission continues to expand, the CCC service level should increase further, toward 80/1000 by 2005. Another way to assess the desired level of CCC service or access is by reference to past policies which would, by their explicit intent, put the CCCs service level somewhere between 77 and 83/1000.

Introduction

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Trends of Importance to Community Colleges

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Future Scenarios

Access begins by describing why the concept is important to California Community Colleges (CCC), and is followed by a proposed definition and measures, discussion of the California Community Colleges history of access over the past three decades, how California Community Colleges compare to community colleges in other states, and finishes by exploring what level of access Californians should expect from their community colleges in light of what the future may hold, given the expected economic, cultural, and demographic changes the state will undergo between now and the year 2005.

Importance of Access

The California policy of "open access" to community colleges by California residents: that every high school graduate and/or those who can ". . . profit from instruction . . ." may enroll, has been a major objective of the CCC for more than thirty years. As the basis for continuing this objective, the Board of Governors *New Basic Agenda* (1996), observes that "California's future depends on its community colleges meeting the expanding educational needs of its population." It further states that access shouldn't be inhibited by fee policies: that fee changes should ". . . maximize educational opportunity and student success."

In large part, access is about the use of community colleges as a tool to redistribute wealth through educational opportunity that adds value to human capital and reduces wage inequality. Indeed, much of the public subsidy and low cost (to the student) of the CCC is to ensure access to those who otherwise couldn't afford to enroll. Research on the overall impact of colleges in this regard isn't conclusive; see, for example, McIntyre and Chan (1997). Illustrating the empirical complexity of the topic, Lin and Vogt (1996) conclude that community colleges equalize individual opportunity, but do not lessen inter-group wage inequities. Evidence from California Student Aid Commission studies (cited by McIntyre, 1997) does show that in California, more-wealthy taxpayers subsidize the education of generally less-wealthy community college students: a "progressive" redistribution of wealth that should lead to less inequality of incomes, provided that there is a positive return to individuals undergoing a community college education. Research by Friedlander (1996), Grubb (1996), McIntyre (1997), and others confirms this (that there is a positive return to investing in community college education) and shows that more education, especially earning program degrees and certificates, leads to more future earnings.

Definition and Measure

Access may be defined in various ways, but is described generally by the level and character of community college enrollments in relation to the demography of the colleges' service area. At the most aggregate level, a measure of access, "participation rate," or "service level" may be defined by colleges' enrollments/service area adult population

But this measure is relevant only if used in the proper context. Colleges or systems may be compared with one another, and differences analyzed; or, changes in the measure for a college(s) over time may be analyzed. Changes or differences are due to the *market*: service area's demography or preferences for education by area residents; and to *market conditions*: college(s)' mission and functions, tuition and fees, financial aid, admissions practices, academic budgets for classes, programs, staffing, and other policies set by the college, its competitors, and other authorities. Thus, changes to or differences in access or service measures are due *both* to factors that the college(s) can manage, i.e., change through policy or practice; and to factors outside the colleges' control, which they may try to anticipate.

If possible, the impact on the access measure of *other suppliers*—who provide educational services comparable to those of community colleges—should be considered. For instance, an increasing provision of occupational training by proprietary schools and by business and industry, sometimes referred to as "in-house training," may partly explain a decline in the community college access rate. Or at an aggregate level, a change in the *population's composition*, say, an increase in modestly-attending older students, also could produce a decrease in measures of aggregate access.

At a more disaggregate level, population can be partitioned by age, gender, economic status, culture, race and ethnicity, and other relevant categories. For instance, historically-low participation among Hispanics may be important for the CCC if, as expected, this ethnic group continues to be the fastest growing population cohort in California. And, the participation of individuals from different income or wealth strata of the population is important to the redistributive aspect of community college access.

Also important to the measurement of access is the success of students, as impacted by the quality of what they are provided; i.e., the continuing question of "access to what?" The Board's *New Basic Agenda* presents a number of initiatives designed to improve the delivery, measurement and recognition of student learning in order to meet the challenge for community colleges to ". . . deliver high quality education in a manner that achieves student success."

California Community College History

California's history of aggregate community college access (Charts 1 and 2) can be interpreted in part by identifying those factors that determine enrollment. Empirical work shows that there are primarily five such factors: (1) the number of adults, (2) unemployed, and (3) level of student fees and costs, which jointly determine *demand*; (4) community college operating budgets; and, (5) funding techniques, which jointly determine *supply* (the number of programs and classes made available). Depicted in Chart 3 for the period 1972 through 2005, these factors are part of an empirically-robust econometric model that is used to forecast long-term enrollments for the system and for the 71 districts; see Chancellor's Office (1996).

Aggregate CCC *participation rates* increased dramatically in the 1960s and 1970s—to a high of 88 fall enrollments per 1,000 adult Californians—until the passage of Proposition 13. Since then, a series of policies and events (Chart 4) reduced the overall rate to 57 per 1,000 by 1995:

Participation	Year(s)	Major causal factor
Increase	1962-77	All growth generally funded
Decrease	1978	Budget reduction due to Proposition 13
Increase	1979-81	All growth funded; rebuilding from 1978 cuts
Decrease	1982	Finding cap imposed; certain classes eliminated
Decrease	1983	No change in budgets; confusion over fees
Decrease	1984	Budget increase offset by new enrollment fee
Increase	1985-88	Budget increases for COLA and growth
Increase	1989-90	Budget increases for program improvement
Decrease	1991-94	Budget reductions due to economic recession
Decrease	1993	Enrollment fee increases

This overall drop of nearly one-third in CCC participation or service level since 1977 is the result of some conscious or intended policies, like the 1984 enrollment fee, and some unintended consequences, like the budget reductions due to the impact on Proposition 98 (the primary source of CCC funding) of the California recession between 1991 and 1994.

What other factors may account for the fluctuations in community college participation? *Data and measurement* changes? Changes by *competitors*? Changes in *population* composition? *College-going preferences*?

Measurement. Two changes in the way community college enrollments are measured could impact findings about access and participation. And while these may be compensating factors, the overall impact is unknown. As funding for growth in regular instruction has been capped (since 1982), more occupational instruction has come to be delivered by *contract education*, conducted outside the cap from support by

using businesses and other agents. To the extent that contract (where enrollments are not reported) replaces regular instruction (enrollments are reported), participation rates are artificially lowered. The empirical impact of this is unknown, however.

Funding changes brought about by Proposition 13 (1978) initially reduced *community service* offerings. But later changes, particularly the 1982 credit course reduction, shifted some of these course offerings out of regular instruction (enrollments are reported) to community service courses (where enrollments are not reported). Findings in the *Funding Patterns* paper suggest that, relative to instruction, CCC efforts for community services have decreased by one-third and are far below efforts reported elsewhere by community colleges.

Competitors. Another factor influencing CCC service levels is the extent to which *other suppliers* or competitors, including the University of California (UC), California State University (CSU), independent colleges and universities, proprietary institutions, businesses and industry, and the emerging "virtual" institutions that deliver less-than-baccalaureate postsecondary programs that are close substitutes for community college offerings.

Between 1991 and 1994, UC and CSU increased their fees, reduced course offerings, and generally managed enrollments such that their undergraduate counts declined. Consequently, a number of students who would ordinarily have taken their lower-division work at UC or CSU enrolled instead at a community college. While the exact number is uncertain, this shift is indicated by: a younger average age, increasing academic load (see Chart 1) for CCC students; stable full-time enrollments in the face of an overall decline; and, waiting lists for English, mathematics, sciences and other core general education classes at two of every three community colleges during this period. The overall impact is suggested also by the changes in college-going rates of the high school graduate cohort (Chart 5). CPEC (1996) also has noted a temporary surge in "reverse" transfers from UC and CSU to CCC in 1991 and 1992. By contrast, enrollment patterns at the three segments were generally parallel during earlier time periods: increases or decreases in all three at the same time.

Less is known about the possible impact of independent colleges and universities on community college access. While the data have been inconsistently reported, it appears that undergraduate enrollments in California independent colleges have increased moderately (about 6,700 students or nine percent in total) since 1980, while enrollments at the CCC have declined by five percent. But this increase in private enrollments would have had little impact on CCC access. Even if all of the increase in independent college lower division, about 4,000 students, would have been at the expense of the CCCs—an unlikely scenario—the impact on CCCs would be trivial: about 0.2 enrollment per 1,000 adults.

By contrast, It is generally thought that other community college competitors have increased significantly their share of the less-than-baccalaureate postsecondary education (PSE) market over time, particularly the proprietary schools. As reported by NCES

(1996), the growth in proprietary enrollment since 1980 (+110%) has far exceeded the change in public (+51%) or in private nonprofit (-1%) higher education enrollments (Chart 6). (NCES also reports a (dubious) decline of one-fifth in the number of noncollegiate proprietaries during the same period.)

The specific change in California's proprietary PSE is also unclear. Data from the California Council on Private Postsecondary and Vocational Education (CCPPVE) suggests that the number of degree- and non-degree-granting institutions, currently estimated at 2,500, is at about the same level it was in 1990, just prior to the advent of rigorous public regulation and the state's economic recession.

California degree-granting proprietaries are generally small—around 300 students each in 1995—and, if degree patterns (Chart 6) are indicative, a total of less than 30,000 students were enrolled in associate degree programs across the state. If these California institutions have grown at rates similar to the nationwide trend—a doubling since 1980—their impact couldn't have taken more than 0.6 enrollments per 1,000 adults from CCCs; again, a trivial portion of the overall 23/1000 CCC decrease during the same period.

The impact on CCCs of the non-degree granting or "vocational" schools may be more substantial, particularly in certain programs. While individually very small—they average 140 students each—they collectively enroll an estimated (by CCPPVE) 300,000 students. Half of these are in business (H.&R. Block, Century 21, Sawyer, etc.), and the remainder in technical, allied health, services, and cosmetology: all programs also offered by the CCCs. While clearly not competitive throughout, CCCs reported 1994 declines in all these same programs: business, engineering and related technologies, commercial services, and allied health; programs that in total accounted for 14 percent of CCC instruction. Applying the same logic as above, these vocational schools could have attracted, at most, up to 150,000 students by 1995, 6 of the 23/1000 lost by CCCs, a nontrivial amount. Further expansion of this vocational school sector is now likely with the sunset of the CCPPVE as a quality control agent in 1997.

Even more likely to compete with the CCCs in the future are (1) the "virtual cyberschools" that offer much, most, or all of their curriculum by electronic distributed learning technologies and (2) the "in-house" training and education conducted by businesses solely for their employees. (Unfortunately, CCCs do not report on the "market niche" of contract education where they train specifically for business and industry.)

It isn't clear that either of these competitors have yet had an appreciable impact on CCC access. But it is clear that they will. Peterson's *Distance Learning Guide* reports a six-fold growth (from 93 to 762) during the past four years in the number of colleges offering distance learning. Tucker (1997) estimates that over one million students are enrolled electronically, compared to 13 million at campuses and at other college "sites." Some of these institutions are "niche marketers," like the University of Phoenix's business program, but many offer both BAs and MAs in all subjects, and some—Brevard (Florida), Education Network of Maine, City University (Washington), and Thomas Edison State (New Jersey)—even offer associate degrees electronically. Clearly,

California Virtual University, International Community College, and Western Governors' University (in collaboration with universities in Britain, Canada and Japan) all will make available curricula that compete with much of what the CCCs offer at the lower-division level.

Population Composition. Following decades of rapid growth, California's total population increase slowed because of the recent recession (Chart 7). Notably, however, the 18-24 year-old component has grown at a slower rate than other cohorts and, in fact, decreased in number between 1990 and 1996. And, after years of occasionally-interrupted declines, the number of annual high school graduates is just now returning to its mid-1970s level. (See *Trends Important to Community Colleges* for more detail.)

The racial and ethnic composition of the state's population is changing as well (Chart 8). In 1990, two of every five Californians were Hispanic, Asian or Black. By 2002, half of California's population will be from a non-white background—thirty percent will be Hispanic—and most of the new residents will be either Hispanic or Asian. If current policies continue, nearly half of the added population between now and 2005 will be foreign immigrants. As a consequence, California's labor force is changing dramatically. Today, seven of every ten workers in the state are either female or males of color. By contrast, fourteen of every 15 net additions to the state's work force (new workers less retirees and deaths) during the next ten years will be either female or males of color. Of these new workers, over half will be women, and many new workers will be recent immigrants.

California community college enrollment changes reflect the state's changing population:

Enrollment	Fall 1983	Fall 1994
NonWhite	39%	51%
NonCitizen	9%	20%

Changing Preferences. Changes over time in the participation by particular population cohorts also can help explain the CCCs service level.

With several notable exceptions, participation rates for all major racial, ethnic, and gender groups have declined in parallel fashion from late 1970s—early 1980s peaks (Chart 9). Exceptions include a dramatic decline in CCC participation since 1977 among African Americans, although females from this group have displayed moderate increases during the past decade. Historically, Asians and others (Filipinos, American Indian, Pacific Islanders, and others) as a group have exhibited the highest and most consistent participation. This is the only racial and ethnic group in which males participate in community colleges to the same degree as do females. Hispanic participation has been the lowest of all groups, although rates for Hispanic females—like those of African American females—have increased moderately during the past decade.

The most recent trends in CCC participation—for the 1990s—show that rates for:

- nonwhite females have increased
- nonwhite males have decreased
- whites (male and female) have decreased

Hispanic and White males currently exhibit the lowest CCC participation rates.

While enrolling a diverse group of students, the CCC still exhibit their highest participation rates among the traditional 18 to 24 year-old market, particularly among 18 and 19 year-olds (Chart 10). Despite the overall low participation rate, community colleges currently enroll the *highest* proportion of the "traditional college-age" 18 to 24 year-old cohort in CCC history. However, rates of market penetration for those over 24 years-of age are at the lowest levels in two decades, reflecting the policy changes discussed above. And, the aging of California's population means that there are fewer 18 to 24 year olds today than ten years ago; hence, the low overall participation rates. This is beginning to change as the "baby boom echo" surges and the number of 18 to 24 year-olds increases more rapidly than all but the oldest segments of the population through 2005 (Chart 7).

Compared to Other Community Colleges Nationally

The community college movement in California generally preceded that of most states and the CCC service level rose, by 1975, to be nearly six times greater than that of community colleges elsewhere (Chart 11). Since then, however, the picture is quite different. California community college enrollments have fluctuated dramatically and its participation rate has declined by one-third in the twenty year period 1975-95. By contrast, the average participation rate for community colleges in other states has increased by one-third during the same period.

Still, the community college participation rate in California is more than twice the average rate in other states. Only community colleges in Arizona serve a greater proportion of their population (see Chart 12). And, only Alabama, Florida, Hawaii, Illinois, Kansas, Nebraska, Nevada, Oklahoma, Oregon, Texas, Washington, and Wyoming are even close to California in their community college participation rates.

Several conclusions can be drawn from the national comparison:

- While California Community College access relative to colleges elsewhere has declined from 1990, it is high and its community college fees and financial aid continue to be among the lowest in the country (Chart 13).
- Community Colleges with high fees and high financial aid are characterized by relatively low access rates (Chart 13). Financial aid does not increase in proportion to increased fees across the country.
- Despite its low fees, California Community College taxpayer support per FTE is lower than that in virtually all other states (see paper on *Funding Patterns*). This is because CCC costs are lower due to faculty teaching about three more hours per week to classes averaging about ten more students and to California's overhead (administrative and plant maintenance) costs being generally lower than in other states.

California community colleges obviously play a different role—evidently far greater—in the education and training of Californians than do community colleges in other states where other institutions and agencies provide services traditionally offered by community colleges. There are a number of reasons for California's position, and it appears that comparisons with other states are of limited use in deciding what California's level of community college access or service ought to be.

What should California Community College access or service level be? And what factors are important in that determination. What does the "literature" say? What do Californians, especially those whose taxes subsidize community college instruction, want? What do they need?

One useful context for our analysis of the proper access level is to examine the skills needed from Community Colleges by Californians who are or have entered adulthood, in relation to the skills these Californians possess. Three factors are especially relevant to this discussion: technology, opportunity, and mission.

Technology. Kerr, et. al. (1994) present a cogent argument for higher education's role in supplying and helping distribute workers effectively into the labor market, and thereby contribute to economic development. And, the most significant fact around this function is that the ***job skill needs*** of the American economy ***will continue to increase.*** It is estimated that just over one-third of the labor force needed some postsecondary education in 1975 (Chart 14). By 1990, this proportion had risen by 16 percent to two of every five workers, and is projected to rise another seven percent by the year 2005 to nearly half of all workers. Stated differently, three of every five new workers during this period need at least some postsecondary education. While these are nationwide estimates, there is little doubt that the same phenomenon—of increasing labor skill levels—is occurring in California.

The implication of this trend is that: other things being equal (like the relative market share of other educational suppliers), CCC should be increasing their level of service to California adults by at least as much as the increase in skill levels, or another seven percent by 2005. In other states, the skill level increases of 16 percent between 1975 and 1990 were more than met by increased service level of 24 percent by community colleges. While national rates were up, during this period, California's participation declined by nearly one-third. A smaller proportion of the state's adults are obtaining a postsecondary education in California today than was the case twenty years ago.

Opportunity. Another reason for increased service by community colleges to Californians has to do with ***wage inequality***. Freeman and Katz (1995) show that U.S. wage inequality rose rapidly during the 1980s, generally because of changes in supply and demand for different skill categories. By contrast, in other advanced countries, wage-setting institutions prevented further inequalities.

Practitioners like Cohn and Brawer (1995) argue that community colleges' liberal admissions, frequent location, and diverse programs provide access, and, therefore, opportunities for individuals to improve their employment and earnings. But, Brint and Karabel (1989) argue, by contrast, that the colleges perpetuate inter-group earnings inequality. To add confusion, most researchers frame this debate around whether

individuals have a better chance of obtaining a baccalaureate degree if they start in a four-year, rather than in a two-year (community), college; Daugherty (1992) and Whitaker and Pascarella (1994) finding in favor of four-year institutions. As noted above, a more recent study by Lin and Vogt (1996) adds further confusion by concluding that community colleges equalize individual, but not inter-group, opportunities.

While the CCC clearly enroll individuals who are less wealthy than the general taxpayer, there remains considerable inter-group wage inequality in California (Chart 15). And while California's educational levels are greater than elsewhere in the nation, low wages for Blacks and Hispanics are reflected in the relatively lower training they have obtained (Chart 16). This relates partly, in turn, to the decline in Black CCC participation and historically low Hispanic participation (Chart 11). Moreover, given the coming growth patterns of the labor force (Chart 17), it is both a matter of economic justice or opportunity and development or growth that these groups be afforded a higher service level by community colleges. This adjustment can be approximated by returning Black participation to its higher 1970s level and taking Hispanic participation from its historically low level to the targeted future average.

Another reason for greater levels of education and training is related to the changing character of the labor force. California's recent recession and current recovery are unlike any of the previous cycles in that certain industries (defense, aerospace, and related) have been permanently reduced and jobs forever eliminated, and recovery has been less-robust, but longer-lasting, thereby requiring greater retraining needs than ever before. Moreover, the proportion of adults officially in California's labor force had dropped from 69 percent in 1990 to 65 percent 1995. If this proportion—measuring labor force participation—had not so changed, unemployment in California would have been 12 percent in 1995, rather than the 6.5 percent officially estimated. The Field Institute (1996) estimates that 20 percent of California adults are seeking some or different employment. These conditions suggest there is a substantial cadre of potential workers who, for one reason or another, are not in or satisfied with their employment, possibly because of changing skills requirements, many of whom likely require further training or retraining.

Mission. Other arguments may be advanced for an increased CCC service level. As immigrants continue to enter California, the *need for English as a Second Language (ESL)* will continue to grow disproportionately as will the need to teach entry job skills to individuals who are using recently-acquired language capabilities. Immigrants currently comprise 20 percent of California's population, but will comprise 40 percent of the state's growth between now and 2005.

Changes to the CCC mission, of course, impact enrollment and participation. Formal adoption of the *economic development* function involves expansion of CCC programs and, therefore, impacts participation by Californians. Assumption of more of the *remedial or precollegiate* responsibilities formerly conducted by UC and CSU—if this takes place as expected—also will tend to push the CCC participation rate upwards, depending on resource availability. And, expansion of the CCC role in educating and

training *welfare* recipients could well increase the service level quickly and substantially. Finally, more effort at globalization of the CCC curriculum and services would also have the same result.

To summarize these proposals:

The seven percent increase in education and training for increasing **job skills** by 2005 suggests a similar increase in participation of:

- *4.77 enrollment per 1,000 California adults = 135,000 added enrollment by 2005*

The **opportunity** proposal would target wage inequalities and access and training deficiencies by increasing Black enrollment by 36 per 1,000 and the Hispanic enrollment by 11.5 per 1,000, for an overall impact of

- *3.65 enrollment per 1,000 California adults = 103,000 added enrollment by 2005*

The result of these steps is displayed in Chart 18, and would effectively take the Community College service level from its expected 68 enrollment per 1,000 California adults—resulting from the surge of 18-24 year-olds, along with adequate funding through 2000—and increase that level to 76 per 1,000.

While difficult to measure, expanding elements of the CCC mission should increase the participation rate further, and these factors, added to the technology and opportunity above, could push the colleges' service level toward 80 per 1,000.

Apart from identifying the *needs* of Californians for education and training at improved levels, another way of analyzing CCC service levels is in relation to *past public policies*. These policies could suggest that future CCC service levels should:

(1) be greater than 1990 (68/1,000) since Proposition 98 (1988) and AB 1725 (1988) reform measures were unintentionally interrupted by the economic recession; but,

(2) be less than 1981 (83/1,000) since (a) this was the last year of uncontrolled growth, (b) there also followed, in 1982, steps to make the CCC curriculum more rigorous by cutting certain marginal credit courses; and, (c) there has been some increase in the share of the less-than-baccalaureate market delivered by other suppliers; and, thus,

(3) be roughly equal to the 1982 level (77/1,000) with adjustments for technology,opportunity, college mission, and market share changes.

Thus, both arguments of need and policy precedent converge toward a CCC service level that is in the upper 70s—near 80—per 1,000 adult population, whether based on the emerging educational needs of Californians or based on the apparent intent of the state's policymakers.

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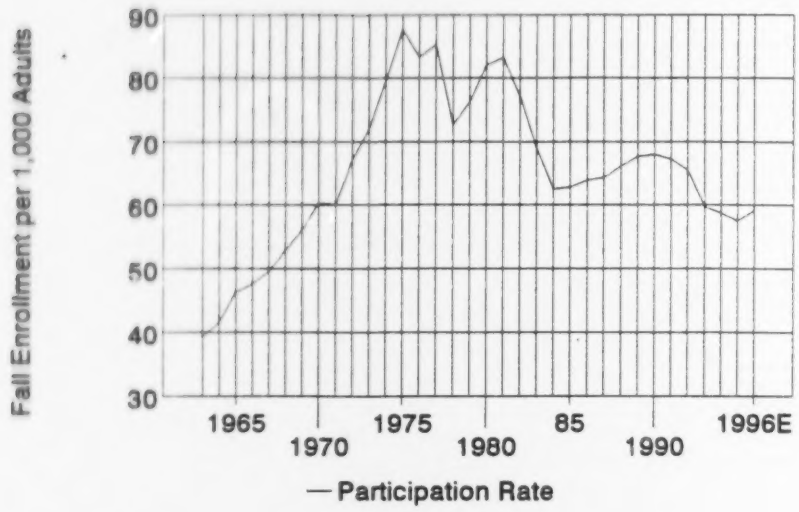
Chart 1
Community College Participation and Academic Loading
1963-1996

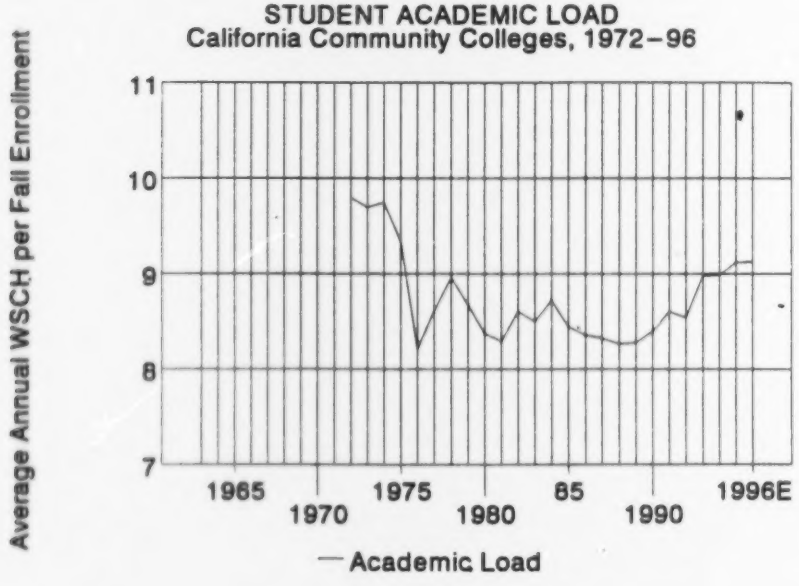
Year	Fall Enrollment	California Adults	Part'n Rate*	Ave.Annual WSCH	WSCH/ Enroll	
	434,792	11,083,372	39.2	na		
	473,501	11,381,029	41.6	na		
1965	543,225	11,736,468	46.3	na		
	570,907	11,998,523	47.6	na		
	610,769	12,328,631	49.5	na		
	665,490	12,599,325	52.8	na		
	722,429	12,884,843	56.1	na		
1970	825,154	13,690,398	60.3	na		
	837,350	13,950,784	60.0	na		
	953,245	14,205,704	67.1	9,341,797	9.80	
	1,045,271	14,534,063	71.9	10,139,125	9.70	
	1,176,382	14,797,686	79.5	11,471,235	9.75	
1975	1,331,172	15,181,683	87.7	12,437,516	9.34	
	1,300,565	15,603,006	83.4	10,675,805	8.21	
	1,366,741	16,022,834	85.3	11,764,613	8.61	
	1,199,233	16,505,484	72.7	10,741,091	8.96	
	1,290,949	16,943,591	76.2	11,193,259	8.67	
1980	1,430,332	17,430,088	82.1	11,979,086	8.38	
	1,479,447	17,778,907	83.2	12,265,547	8.29	
	1,400,967	18,164,650	77.1	12,050,150	8.60	
	1,281,520	18,561,177	69.0	10,886,592	8.50	
	1,183,206	18,924,791	62.5	10,315,427	8.72	
85	1,215,467	19,355,138	62.8	10,259,029	8.44	
	1,267,064	19,820,879	63.9	10,586,311	8.35	
	1,307,399	20,330,942	64.3	10,885,462	8.33	
	1,381,708	20,883,514	66.2	11,419,806	8.26	
	1,455,283	21,506,731	67.7	12,050,009	8.28	
1990	1,505,381	22,145,368	68.0	12,641,806	8.40	
	1,515,261	22,523,637	67.3	13,031,434	8.60	
	1,500,393	22,886,627	65.6	12,812,432	8.54	
	1,376,565	23,034,121	59.8	12,364,674	8.98	
	1,357,293	23,133,103	58.7	12,198,234	8.99	
	1,336,300	23,250,285	57.5	12,184,626	9.12	
1996E	1,396,434	23,627,693	59.1	12,735,478	9.12	**

Sources: Chancellor's Office, Research and Analysis Unit, July 1997

Notes: Enrollments prior to 1990 increased by 1.034 to reflect 1990 reporting change period.
*Participation Rate = Fall Enrollment per 1,000 Adult Population.
**Loading assumed to be constant from 1995-96 to 1996-97.

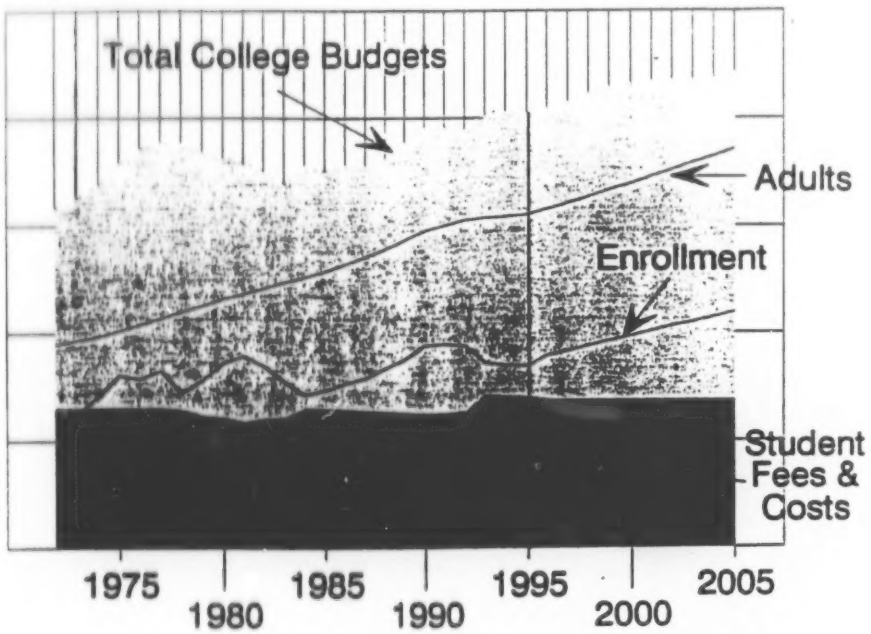
Chart 2
Participation Rates
1963-1996





Sources: Chart 1

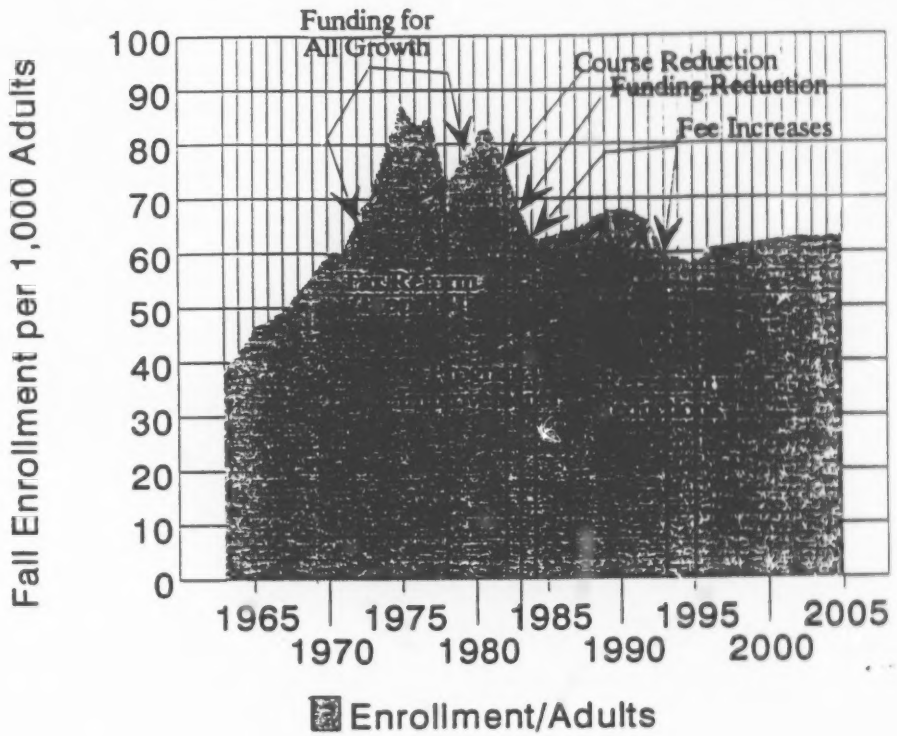
Chart 3
California Community College Trends
1972-1995 Actual; 1996-2005 Forecast



Sources: Chancellor's Office, California Community Colleges, September 1996.

Notes: *Student Costs* include annual real (price-adjusted) student expenditures per FTES for fees, books, and supplies, transportation, and child care. *Total College Budgets* are total annual real current expense of education. *Enrollment*: total community college fall headcount enrollment. *Adults*: California population 18 years of age and over (arithmetic adjustments are made to bring trends to similar scale.)

Chart 4
Access and Policy
1963-1995 Actual; 1996-2005 Forecast



Sources: Chancellor's Office, California Community Colleges, September 1996.

Notes: Major policies are depicted as influencing enrollment change. Lesser policies, economic conditions (unemployment), and demographic change also impacted enrollment, but typically to a lesser degree.

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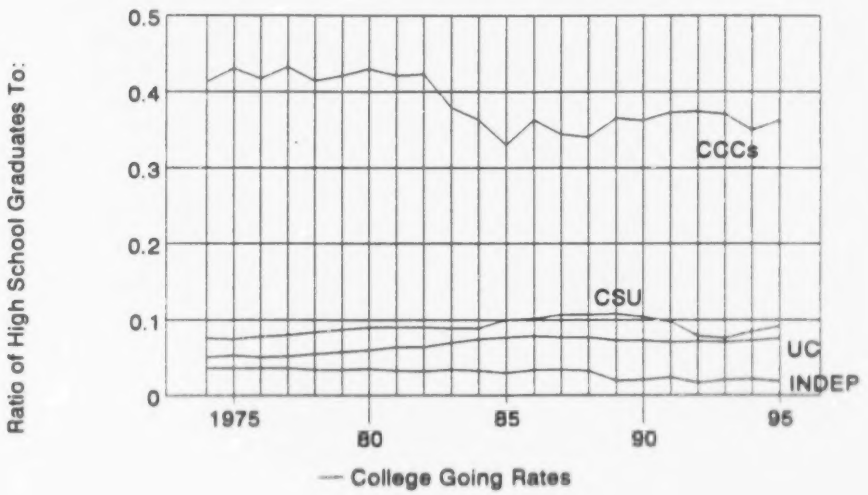
Chart 5
College-going Rates of Recent California High School Graduates
1974-95

	Private Institutions	University	State University	Community Colleges	Total
	0.036	0.051	0.076	0.413	0.576
1975	0.036	0.053	0.075	0.431	0.595
	0.036	0.051	0.078	0.417	0.582
	0.036	0.052	0.080	0.433	0.601
	0.034	0.055	0.084	0.414	0.587
	0.034	0.058	0.087	0.421	0.600
80	0.035	0.060	0.090	0.430	0.615
	0.033	0.064	0.090	0.421	0.608
	0.032	0.064	0.090	0.423	0.609
	0.034	0.070	0.089	0.379	0.572
	0.033	0.075	0.089	0.363	0.560
85	0.030	0.077	0.100	0.330	0.537
	0.034	0.079	0.102	0.363	0.578
	0.034	0.077	0.107	0.344	0.562
	0.033	0.077	0.107	0.340	0.557
	0.020	0.073	0.108	0.365	0.566
90	0.021	0.073	0.104	0.362	0.560
	0.024	0.071	0.098	0.373	0.566
	0.017	0.072	0.079	0.374	0.542
	0.021	0.071	0.076	0.371	0.539
	0.022	0.073	0.085	0.350	0.530
95	0.019	0.076	0.092	0.362	0.549



Source: California Postsecondary Education Commission, 1998 and 1996; Chancellor's Office, 1997

Chart 6
Change in U.S. Postsecondary Education and California Postsecondary Education Estimated Enrollment and Degrees Awarded
1980 to 1994

	1980	1994	Change	%
Enrollment in Higher Education Institutions:				
Public 4-Year	5,128,812	8,749,060	3,620,468	70.6%
2-Year	4,328,782	5,529,710	1,200,928	27.7%
Private Nonprofit	1,521,614	1,506,879	(14,735)	-1.0%
Proprietary	111,714	235,003	123,289	110.4%
Religious	1,006,173	1,403,228	397,055	39.5%
Number of Higher Education Institutions:				
Public 4-Year	552	605	53	9.6%
2-Year	1274	1473	199	15.6%
Private Nonprofit	795	719	(76)	-9.6%
Proprietary	164	314	150	91.5%
Religious	774	933	159	20.5%
Number of Noncollegiate Postsecondary Institutions:				
Public	896	538	(358)	-40.0%
Private Nonprofit	790	1214	424	53.7%
Proprietary	6044	4806	(1,238)	-20.5%

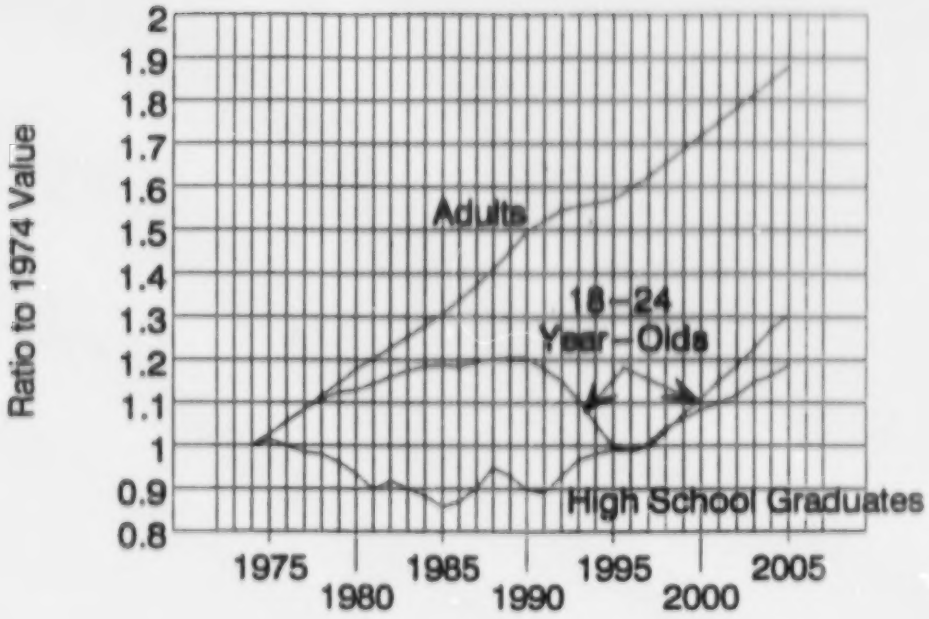
CALIFORNIA POSTSECONDARY EDUCATION
ESTIMATED ENROLLMENT AND DEGREES AWARDED

	Enrollment Fall 1995		Degrees Granted 1993			
	Headcount	%	Associate	Bachelors	Masters	Doctorate
Higher Education						
UC	163,704	6.7%	0	31,130	6,417	2,075
CSU	325,976	13.3%	0	56,665	12,447	25
CCC	1,336,300	54.4%	51,456 21,887 *			
Nonprofit	231,337	9.4%	NA	NA	NA	NA
Proprietary (est.)						
Degree-Granting	90,000	3.7%	3,400 14,500 **	5,700	2,900	1,200
Non-Degree	310,000	12.6%	174,500 **	0	0	0
TOTAL	2,457,317	100.0%				

*Certificates
**Non-degree "Completions"

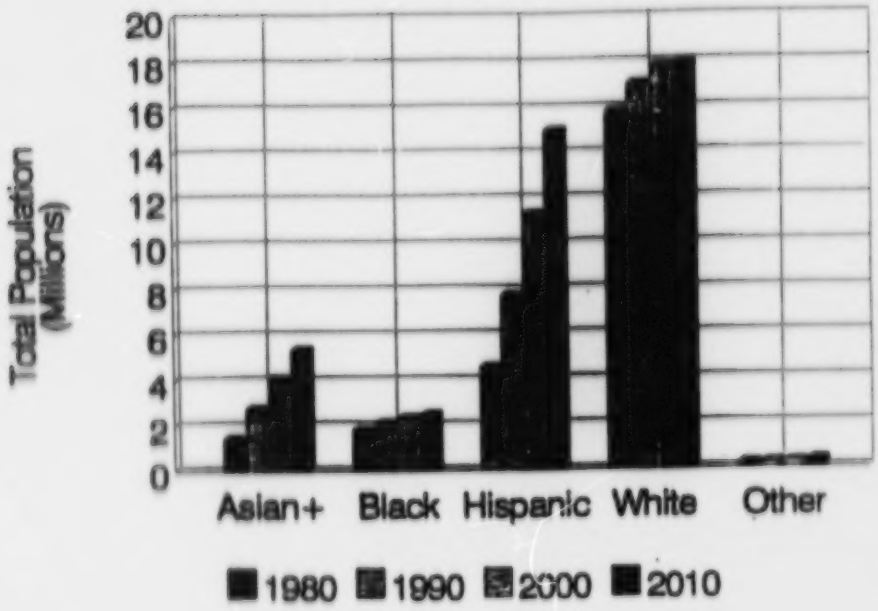
Sources: Chancellor's Office, 1997; California Postsecondary Education Commission, 1996; NCES, 1996; CCPPVE, 1996.

Chart 7
California Demographic Trends
1974-94 Actual; 1995-2005 Forecast



Sources: Derived from Department of Finance, 1996;
California Postsecondary Education Commission, 1995.

Chart 8
California Racial and Ethnic Groups
1980, 1990 Actual; 2000, 2010 Forecast



Note: Asian+ includes Asian and Pacific Islanders.
Source: Derived from Center for Continuing Study of the California Economy; California Population Characteristics, 1995.

Chart 9
Percent Enrollment of Adult Population by Ethnicity and Gender
1977-1996

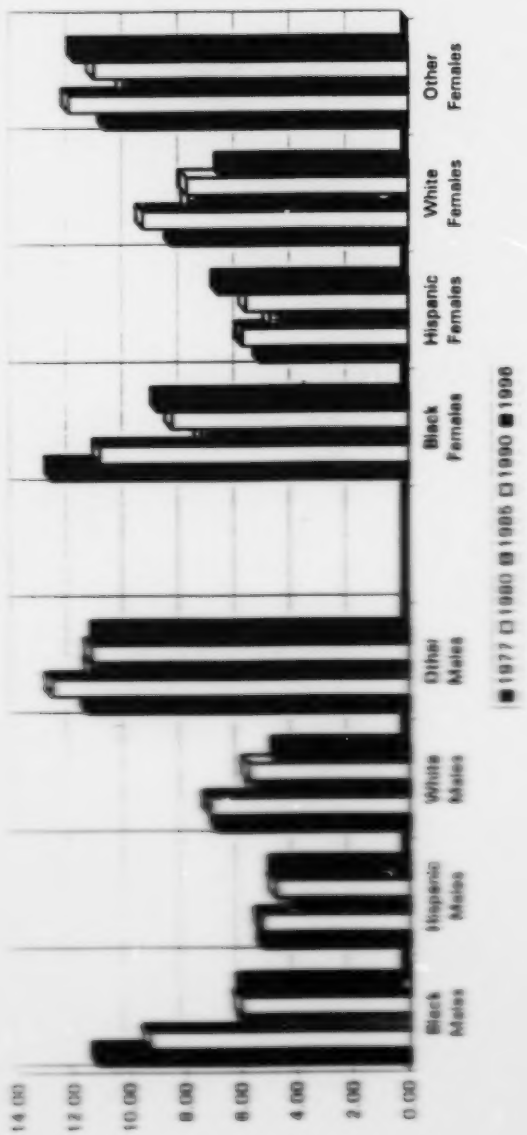
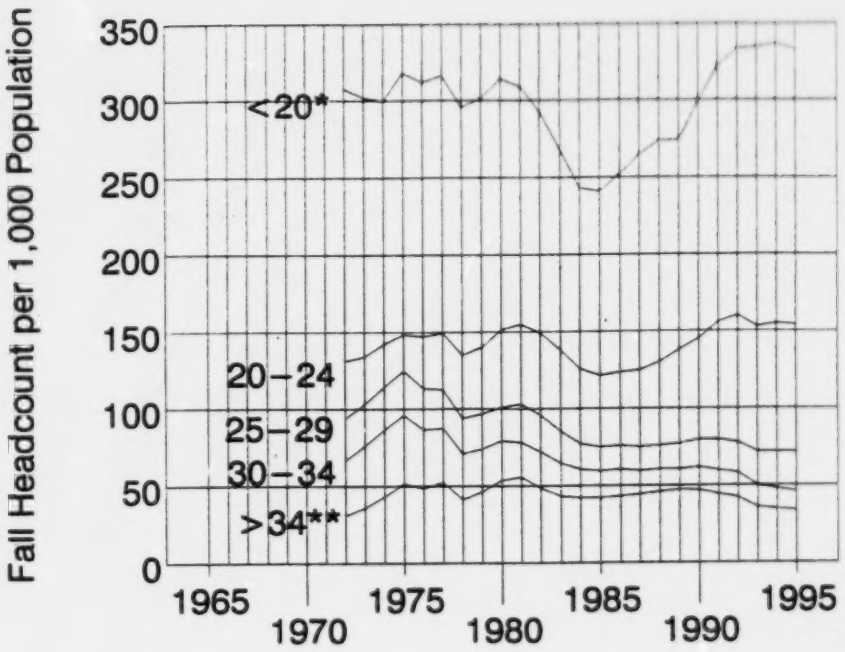


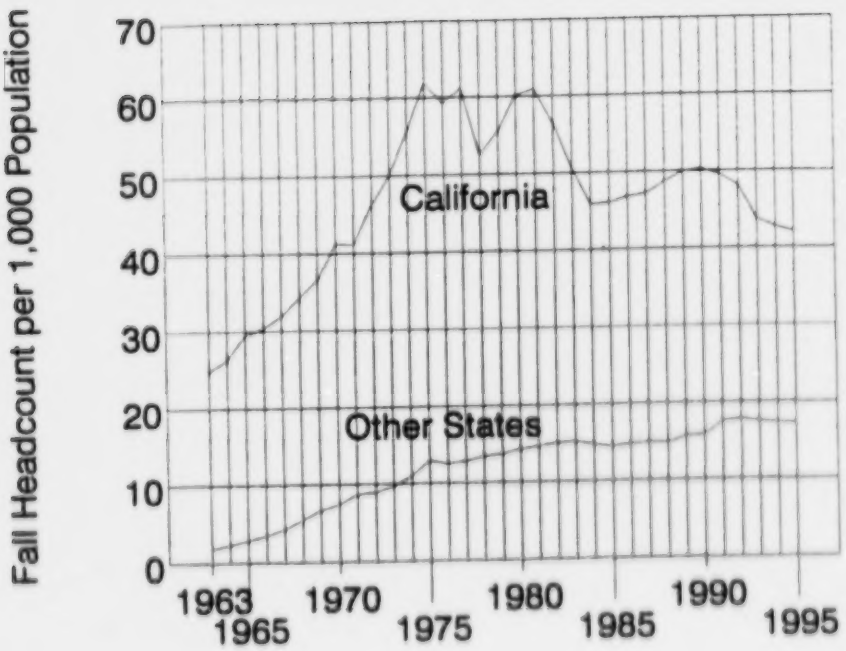
Chart 10
Community College Participation Rates by Age
1965 to 1995



Sources: Chancellor's Office, 1997; Department of Finance, 1997

*Students less than 20 years old compared to 18- and 19-year olds.
**Students 35 years old and over compared to population 35 to 64.

Chart 11
Community College Participation Rates
1963 to 1995



Source: Chancellor's Office, California Community Colleges, Research and Analysis Unit April 1997.

Chart 12
Percent of Population Aged 18 and Over Serve by a Community College by State
1994-95

STATE	Head Count Enrollment: Fall only 1995	Head Count Enrollment: Full-year: 1994-95	Population Aged 18 and over	Percent of population served: Fall only 1995	Percent of population served: Full-year: 1994-95
Alabama	108,585	268,980	3,172,837	3.4%	8.4%
Alaska	640	2,806	414,384	0.2%	0.7%
Arizona	148,812	284,478	3,024,670	4.9%	9.7%
Arkansas	26,751	47,341	1,834,248	1.5%	2.6%
California	1,033,281	1,921,532	22,796,537	4.5%	8.4%
Colorado	80,452	154,412	2,756,366	2.9%	5.6%
Connecticut	42,987	66,733	2,476,929	1.7%	2.7%
Delaware	11,883	15,629	536,371	2.2%	2.9%
District of Columbia	0	0	439,804	0.0%	0.0%
Florida	353,517	675,383	10,794,342	3.3%	6.3%
Georgia	83,806	147,617	5,277,288	1.6%	2.8%
Hawaii	27,275	36,231	877,553	3.1%	4.1%
Idaho	18,345	24,447	818,337	1.6%	3.0%
Illinois	340,621	683,935	8,704,048	3.9%	8.0%
Indiana	42,175	75,039	4,316,113	1.0%	1.8%
Iowa	84,871	89,687	2,117,253	2.6%	4.2%
Kansas	74,884	142,224	1,672,587	4.6%	7.8%
Kentucky	40,260	76,156	2,667,511	1.7%	2.8%
Louisiana	37,882	65,941	3,103,130	1.2%	2.1%
Maine	5,413	14,062	936,487	0.6%	1.5%
Maryland	107,803	171,780	3,779,473	2.9%	4.5%
Massachusetts	75,511	136,206	4,041,588	1.9%	3.0%
Michigan	197,804	365,210	7,039,896	2.8%	5.2%
Minnesota	80,791	142,241	3,364,056	2.7%	4.2%
Mississippi	82,274	77,114	1,935,334	2.7%	4.0%
Missouri	74,149	139,247	3,911,971	1.9%	3.3%
Montana	7,306	11,891	694,147	1.2%	1.9%
Nebraska	36,433	60,539	1,193,015	3.1%	5.7%
Nevada	33,988	60,739	1,131,533	3.0%	5.4%
New Hampshire	8,954	16,915	853,284	1.0%	2.0%
New Jersey	139,940	305,106	5,991,779	2.3%	5.1%
New Mexico	34,354	54,136	1,186,308	2.9%	4.6%
New York	353,302	371,982	13,986,219	1.9%	2.7%
North Carolina	147,290	273,743	5,586,019	2.7%	5.1%
North Dakota	6,987	13,901	470,933	1.5%	2.7%
Ohio	149,276	348,610	8,290,068	1.8%	3.0%
Oklahoma	71,888	114,438	2,369,848	3.0%	4.8%
Oregon	70,958	178,006	2,843,849	2.5%	7.8%
Pennsylvania	112,283	178,525	8,182,540	1.3%	2.0%
Rhode Island	18,346	27,744	782,183	2.0%	3.7%
South Carolina	61,276	117,886	2,728,833	2.2%	4.3%
South Dakota	2,924	4,886	633,086	0.5%	0.8%
Tennessee	83,201	134,507	3,845,754	2.1%	3.2%
Texas	423,212	710,367	13,323,574	3.2%	5.3%
Utah	29,883	44,140	1,276,790	2.3%	3.5%
Vermont	5,030	8,423	436,011	1.1%	1.9%
Virginia	130,781	216,763	5,026,631	2.6%	4.3%
Washington	186,780	291,076	4,012,836	3.9%	7.3%
West Virginia	7,337	9,832	1,466,373	0.5%	0.7%
Wisconsin	103,866	237,796	3,799,686	2.8%	6.3%
Wyoming	18,009	31,204	343,918	5.2%	9.1%
Total, USA	5,344,723	9,437,860	194,918,318	2.7%	4.8%

Sources: NCES; IPEDS Data Files and U.S. Bureau of the Census; Current Population Survey
Provided by AACC, 1997

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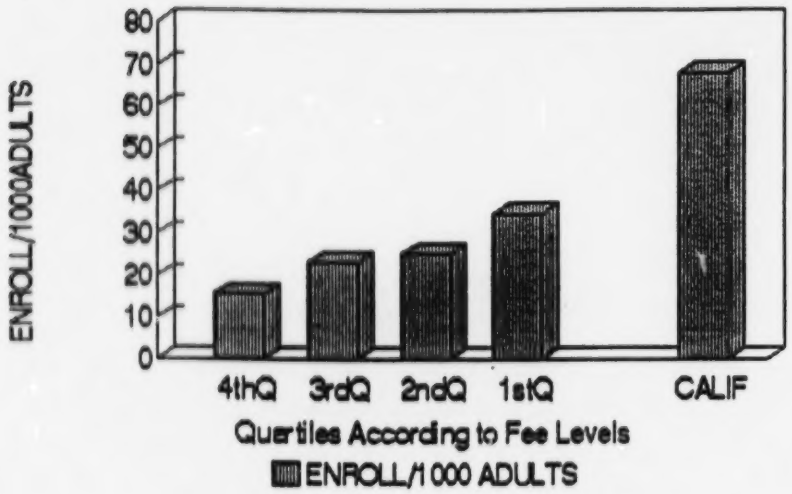
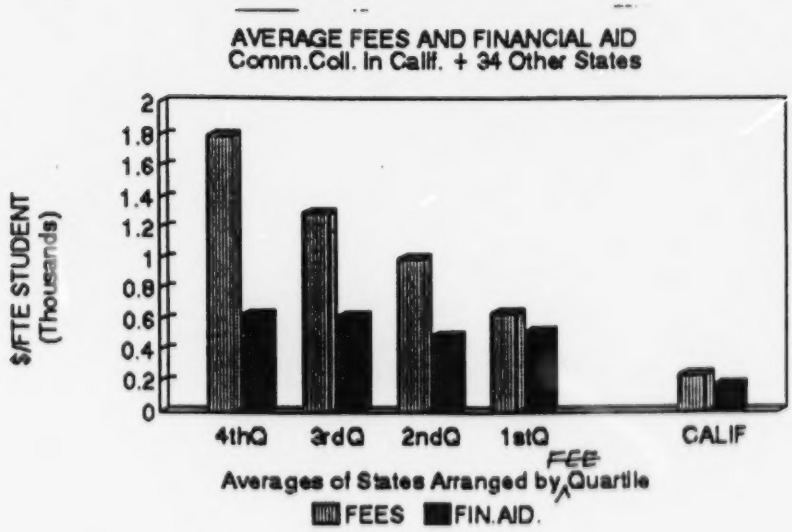
Chart 13
Community College Access, California and
34 Other States and Average Fees and Financial Aid





Source: Chancellor's Office, 1993 *Fee Impact Study*

Chart 14
U.S. Employment by Occupational Group and New Employment by Occupational Group

U.S. Employment by Occupational Group (000s)

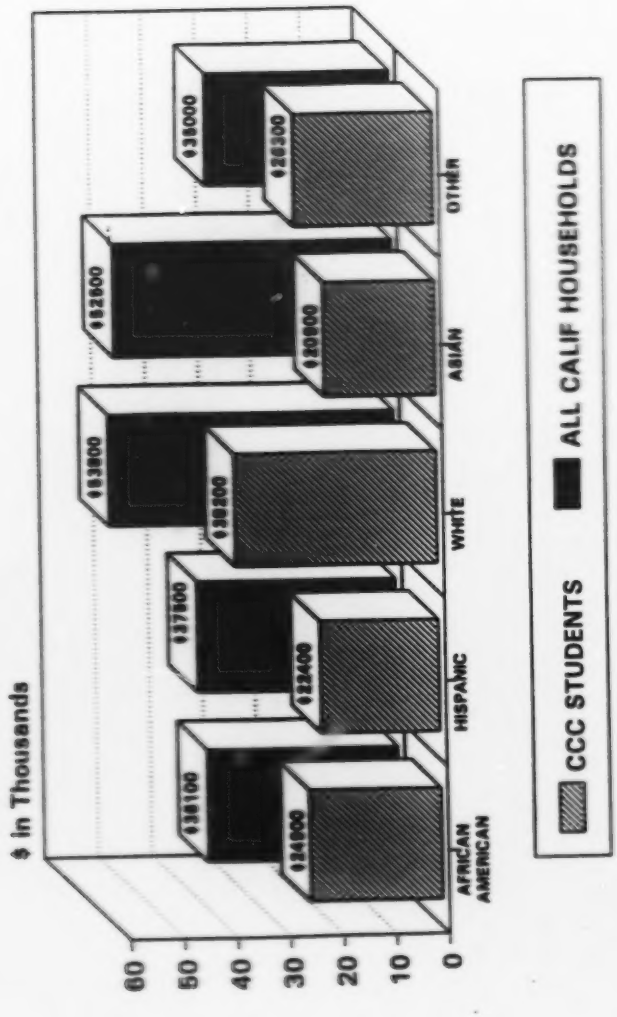
	1975	%	1990	%	2005	%
TOTAL	89209		122573		147191	
Exec, Admn, Mgrl	6800	8%	12451	10%	15866	11%
Professional	9881	11%	15800	13%	20907	14%
Technicians, related	2393	3%	4204	3%	5754	4%
Marketing, Sales	9083	10%	14088	11%	17489	12%
Service, support	3528	4%	4801	4%	6202	4%
SUBTOTAL WITH PSE	31685	36%	51344	42%	66218	45%
Clerical, support	16394	18%	21951	18%	24835	17%
Service	10583	12%	14403	12%	18605	13%
Agricultural, related	3887	4%	3506	3%	3665	2%
Precision Production	10957	12%	14124	12%	15909	11%
Operators, laborers	16162	18%	17245	14%	17961	12%
SUBTOTAL WITH <PSE	57983	65%	71229	58%	80975	55%

New Employment by Occupational Group
U.S. in 000s

	1975–90	%	1990–2005	%
TOTAL	33364		24618	
Exec, Admn, Mgrl	5651	17%	3415	14%
Professional	5919	18%	5107	21%
Technicians, related	1811	5%	1550	6%
Marketing, Sales	5005	15%	3401	14%
Service, support	1273	4%	1401	6%
SUBTOTAL WITH PSE	19659	59%	14874	60%
Clerical, support	5557	17%	2884	12%
Service	3820	11%	4202	17%
Agricultural, related	−381	−1%	159	1%
Precision Production	3167	9%	1785	7%
Operators, laborers	1083	3%	716	3%
SUBTOTAL WITH <PSE	13246	40%	9746	40%

Source: Johnston, W. (1987). and Silvestroi, G. and Lukasiewicz, J. (1991).

Chart 15
Mean Incomes of CCC Students and All California Households
1991



Source: 1992 SEARS; 1990 Census; Commission on State Finance, 1992

Chart 16
Educational Attainment, California and U.S. by Level (1994) and Years of School by Ethnicity and Occupation by Ethnicity, California (1992-94 Average)

	California	U.S.
8th Grade or Less	12.2%	8.8%
1–3 years of high school	8.6%	10.3%
High school graduate	26.9%	34.4%
Some college	27.5%	24.3%
BA degree or more	24.7%	22.3%
Total	100.0%	100.0%

YEARS OF SCHOOL BY ETHNICITY

	California 1990	California 1994	U.S. 1994
Asian +	12.6	13.1	13.2
Black	12.4	12.8	11.9
Hispanic	9.1	9.7	10.2
White	13.4	13.5	12.9
Total	12.4	12.4	12.6

OCCUPATION BY ETHNICITY, CALIFORNIA, 1992–94 AVERAGE

	Asian +	Black	Hispanic	White	Total
Managerial and Professional	30.8%	19.3%	9.9%	35.1%	0.273
Sales, Admin. & Tech Support	34.1%	40.2%	23.9%	33.6%	0.315
Subtotal*	64.9%	59.5%	33.8%	68.7%	58.8%
Service Workers	13.2%	19.1%	19.5%	10.3%	0.134
Precision and Craft Workers	8.3%	6.8%	13.1%	10.7%	0.109
Operators and Laborers	12.0%	13.4%	25.0%	8.4%	0.133
Farm Workers	1.6%	0.9%	8.7%	1.8%	0.035
Subtotal**	35.1%	40.2%	66.3%	31.2%	41.1%

*Most (about three of every four) requiring some postsecondary education.
**Not generally requiring a postsecondary education.

Sources: Center for the Continuing Study of the California Economy, 1995; Current Population Survey, 1995

Chart 17
California Labor Force by Ethnic Group
1995-2005

California
Labor Force by Ethnic Group
1995-2005
(Thousands)

	1995	2000	2005	1995-2005 Change	1995-2005 Percent Change
Hispanic	4,208.7	5,177.6	5,977.2	1,768.5	42.0%
Non Hispanic					
White	8,531.3	8,950.2	8,962.7	431.4	5.1%
Black	874.6	975.8	1,007.8	133.2	15.2%
Asian & Other	1,769.5	2,105.9	2,407.9	638.4	36.1%
Total Labor Force	15,384.0	17,209.5	18,355.7	2,971.7	19.3%

Source: CCSCE

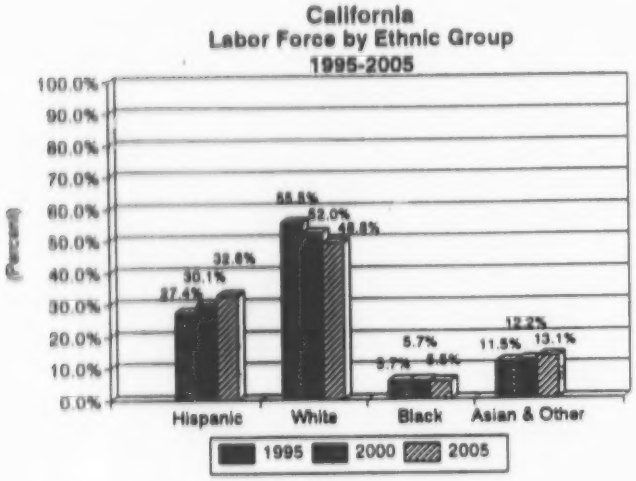
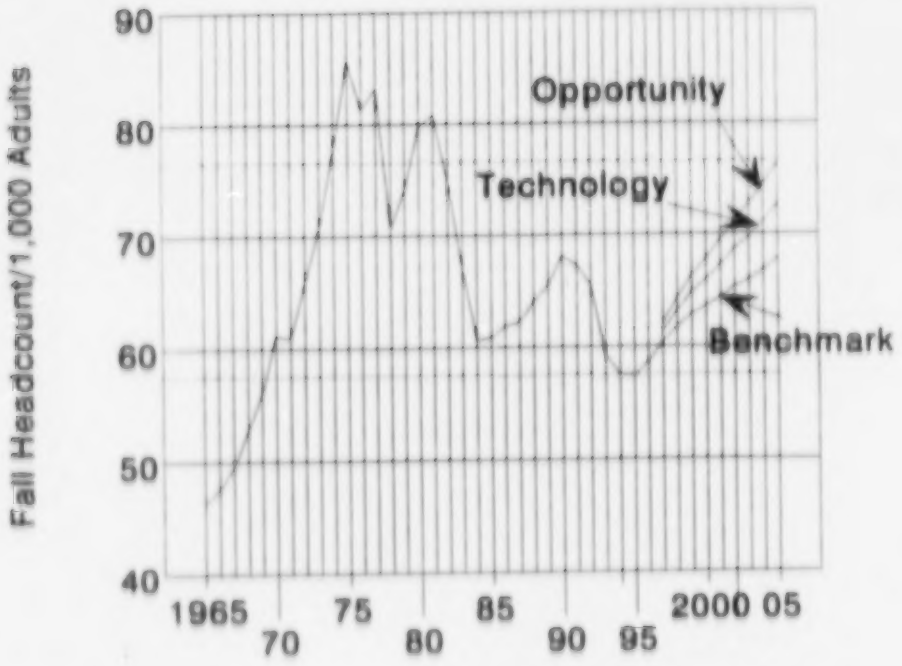


Chart 18
Community College Participation Rates
1965-96 Actual; 1997-2005 Estimated



Sources: Chancellor's Office, Research and Analysis Unit, June 24, 1997

Notes: "Benchmark" is result of Scenario C assumptions; historic, but moderate, economic growth, recession around turn of century, no major student fee increases, and continued Proposition 98 (1988) funding. See Focus 2005 paper.

"Technology" is the added participation required for additional California Adults to receive the job skills increases needed by the labor force due to technological advancements.

"Opportunity" portrays the objective of redistributional or wage equity sought by policies to restore Black participation to its 1970s levels; and bring Hispanic participation from its historically-low levels to at least the targeted average; all by 2005.